

Multi-plate Clutch Device and Clutch Disk Assembly

Technical Field

The present invention relates to a multi-plate clutch device and a clutch disk assembly, and in particular to a multi-plate clutch device and a clutch disk assembly that are strengthened for high load use.

Background Art

Usually, a multi-plate clutch device used in racing automobiles is designed with emphasis given to use at high loads and durability. This type of multi-plate clutch device is disposed with a clutch disk assembly disposed near an engine flywheel and a clutch cover assembly that is fixed to the flywheel and includes a pressure plate for pressing the clutch disk assembly towards the flywheel. Moreover, the clutch disk assembly is disposed with an annular friction coupler at an outer peripheral side thereof, and the friction coupler is disposed with a plurality of first friction plates and a second friction plate disposed between the plurality of first friction plates. When the first and second friction plates are nipped between the flywheel and the pressure plate, torque is directly transmitted to a transmission input shaft via the clutch disk assembly (e.g., see Japanese Patent Application Publication No. 2003-90355).

The torque transmission capacity of the clutch device is determined by the urging force on the pressure plate, the diameter of the friction plates (effective radius of the clutch), the material of the friction plates (friction coefficient) and the number of friction surfaces. For example, by making the urging force or the friction coefficient larger, or by increasing the number of friction surfaces, frictional resistance becomes larger and the torque transmission capacity also becomes larger. Also, by increasing the effective radius of the clutch, the torque transmission capacity becomes larger. However, since there are